In the Claims

1. (Currently amended) A method of evaporating a liquid sample contained in a sample holder which is mounted within a chamber and rotated by a rotor at speeds which are monitored to produce speed signals therein during the evaporation so that a centrifugal force is exerted on the contents of the sample holder during the process whilst a pressure below atmospheric is maintained in the chamber in manner known per se, so as to leave as a residue any solid material dissolved or otherwise mixed in the liquid forming the sample, comprising the steps of:

mounting a transducer to monitor the centrifugal force acting on the sample holder relative to the rotor when rotating at a given speed and obtaining a force signal therefrom, supplying the force signal to a computing means, programming the computing means to compute a value equivalent to the centrifugal force exerted on the sample holder due to rotation of the rotor at said given speed, further programming the computing means to compute a weight of the liquid sample and sample holder from the force signal using the computed centrifugal force, and further programming the computing means to generate a control signal for controlling the evaporation process in dependence on the computed weight, wherein the computing means includes a microprocessor adapted to rotate with the rotor.

2. (Previously presented) A method as claimed in claim 1, further comprising the steps of mounting a second transducer to monitor the speed of rotation of the rotor, obtaining a speed signal therefrom, and supplying the speed signal to the computing means for computing said weight.

3. (Cancelled)

4. (Currently amended) A method as claimed in claim 1, wherein the computing means is programmed to convert the ~~transducer~~ force signals from the transducer into a form suitable for transmission to an external receiver.

5. (Currently amended) A method as claimed in claim 4, wherein the computing means converts the ~~transducer~~ force signals from the transducer into digital signals by which a carrier signal is modulated to effect the said transmission.

6. (Previously presented) A method as claimed in claim 1, wherein the force and speed signals are produced continuously and the weight and centrifugal force are continuously computed therefrom.

7. (Currently amended) A method as claimed in claim 6, wherein the computing means has stored therein a value equivalent to the known weight of the sample holder, and is further programmed to compute a value equivalent to the weight of the contents of the holder by deducting from the computed weight a value equivalent to the known weight of the sample holder.

8. (Currently amended) A method as claimed in claim 1, wherein the ~~computer~~ computing means computes the rate of change of the computed weight.

9. (Currently amended) A method as claimed in claim 1, further comprising [[the]] a step of heating the sample during rotation in the chamber to increase the rate of evaporation.

10. (Currently amended) A method as claimed in claim 9, comprising [[the]] a step of controlling the supply of heat to the sample in dependence on the computed weight.

11. (Currently amended) A method as claimed in claim [[8]] 3, comprising [[the]] a step of controlling the supply of heat in dependence on the computed rate of change of weight.

12. (Original) A method as claimed in claim 11, wherein the supply of heat is reduced as the rate of change of weight with time starts to decline, and the evaporation process is terminated when

the rate of change drops to zero, indicating that the sample is dry.

13. (Currently amended) Apparatus for evaporating a sample comprised of solid material dissolved or suspended in a liquid, comprising a vacuum chamber, a rotor therein, drive means for rotating the rotor relative to the chamber, a sample holder for containing the sample and connected to the rotor, force transducer means associated with the sample holder and the rotor for generating a force signal indicative of the centrifugal force acting on the sample holder when rotated at a given speed, and means for supplying the force signal to computing means external of the rotor programmed to convert the force signal at any instant to a computed value proportional to weight of the sample and sample holder, the computing means being further programmed to generate a process control signal for controlling [[the]] a evaporation process in the chamber and including a microprocessor rotatable with the rotor.

14. (Previously presented) Apparatus as claimed in claim 13, further comprising second transducer means associated with the rotor for generating a speed signal corresponding to the speed of rotation of the rotor, the speed signal being transmitted to the computing means for computing said weight.

15. (Previously presented) Apparatus as claimed in claim 13, wherein the force transducer means is a load cell.

16. (Previously presented) Apparatus as claimed in claim 13, wherein the force transducer means is a strain gauge.

17. (Previously presented) Apparatus as claimed in claim 13, wherein the sample holder is movable relative to the rotor, and further comprising a position sensor adapted to produce a signal indicating the position of the sample holder relative to the rotor, as determined by the centrifugal force acting on the sample holder, causing ~~it~~ the sample holder to move relative to the rotor.

18. (Previously presented) Apparatus as claimed in claim 17 wherein a resilient means resists the movement of the sample holder relative to the rotor.

19. (Currently amended) Apparatus as claimed in claim 13 , wherein a plurality of sample holders are mounted on the rotor and a force transducer is provided for at least each selected ones of the holders.

20. (Currently amended) Apparatus as claimed in claim 13, wherein a mechanical device is attached to the rotor ~~or~~ ,or to a spindle on which the rotor is carried and by which ~~it is~~ the rotor rotated, which device automatically adjusts its centre of mass in response to out-of-balance forces acting on the rotor due to differential evaporation of samples.

21. (Currently amended) Apparatus according to claim 13 in which there are at least two sample holders [[are]] mounted on the rotor, each sample holder being pivotal in use about a generally horizontal axis in a radial ~~manner~~ direction relative to the axis of rotation, and further comprising a bearing raceway incorporating a plurality of ball bearings which do not fully occupy the ~~circumferential extent of the~~ raceway and which ball bearings in rotation are automatically distributed around the raceway to counteract any imbalance forces, the raceway being mounted to the rotor or a spindle driving the rotor, thereby to reduce any imbalance caused during ~~the spinning~~ rotation of the rotor as result of differential evaporation of liquids from ~~the~~ each sample holder.

22. (Currently amended) Apparatus as claimed in claim 21, wherein the ball bearings are formed from a high density material ~~such as~~ of a group comprising Tungsten ~~or~~ and depleted Uranium.

23. (Currently amended) A method of measuring the weight of a liquid sample in a sample holder attached to a rotor in a vacuum chamber of a centrifugal evaporator, comprising the steps of mounting a force transducer to monitor the force acting on the sample holder relative to the

rotor during rotation, supplying a force signal from the transducer to a computing means having stored therein a stored weight value corresponding to the empty weight of the sample holder, the computing means being programmed to convert the force signal to a computed weight of the liquid sample and sample holder for a given speed of rotation of the rotor, the computing means being further programmed to deduct said stored weight value from the computed weight, the computing means comprising a microprocessor adapted to rotate with the rotor.

24. (Currently amended) A method as claimed in claim 23, further comprising the steps of monitoring the speed of rotation of the rotor, and supplying a speed signal to the computing means for computing said computed weight ~~signal~~.

25. (Cancelled)

26. (Cancelled)